



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,407	12/12/2003	Thomas L. Kuntz	7762 US	1173

30078 7590 01/26/2007

MATTHEW D. RABDAU  
TEKTRONIX, INC.  
14150 S.W. KARL BRAUN DRIVE  
P.O. BOX 500 (50-LAW)  
BEAVERTON, OR 97077-0001

EXAMINER
----------

AGHDAM, FRESHTEH N

ART UNIT	PAPER NUMBER
----------	--------------

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/734,407

Applicant(s)

KUNTZ, THOMAS L.

Examiner

Freshteh N. Aghdam

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Gu et al (US 6,693,882).

As to claim 1, Gu discloses a frequency correction burst detection method in a receiver comprising the steps of delaying the received signal by a period that is an integer multiple of the symbol period to produce a reference signal (Fig. 3, means 30; Col. 4, Eq. 2-4); and correlating the received signal with a conjugate version of the reference signal to produce a correlation result that is insensitive to a frequency offset in a nominal carrier frequency of the received signal, the correlation result being indicative of a location of the frequency correction burst signal within the received signal (Col. 3, Lines 47-67; Col. 4, Lines 1-67).

As to claim 2, Gu discloses the step of estimating the frequency offset as a function of the correlation result (Fig. 3, means 30 and 42; Col. 4, Eq. 2-3).

Art Unit: 2611

As to claim 3, Gu discloses that the correlating step uses only real components of the received signal for improved computational efficiency where the frequency offset is expected to be within an acceptable range around nominal (Fig. 3, means 30 and 42; Eq. 3; Col. 5, Lines 1-23).

As to claim 4, Gu discloses the steps of determining quadrature components (i.e. imaginary part) of the received signal at the location of the frequency correction burst signal to determine in conjunction with the real components a phase angle (Col. 4, Eq. 4); and estimating the frequency offset as a function of the phase angle (Col. 5, Lines 1-23; Col. 13, Lines 64-67).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu et al, and further in view of Junell (US 5,953,649).

As to claims 5-6, Gu discloses receiving a signal and low pass filtering and sampling the received signal prior to inputting it to the frequency correction burst detection. Gu is not explicit about the step of down converting the received signal to a baseband complex discrete time sample signal by mixing the received signal with a first local oscillator signal to produce an intermediate frequency signal; mixing the sampled

Art Unit: 2611

intermediate frequency signal with a second complex oscillator signal to produce a sample signal with real and quadrature components. One of ordinary skill in the art would recognize that it is well known in the art to down convert the received signal to a baseband complex sample signal in the front-end portion of the receiver prior to performing any other functions on the received signal such as sync detection by down converting the received signal to the intermediate frequency signal using a mixer and an oscillator and down converting the intermediate frequency signal to the baseband signal using another mixer and oscillator as it is evidenced by Junell (Fig. 5, means 51-52; Col. 11, Lines 22-48). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Junell with Gu for proper processing the received signal by down converting the received signal to the baseband signal.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Huang et al (US 5,991,289) see figure 4, means 10.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

Art Unit: 2611

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam  
January 19, 2007

  
**KEVIN BURD**  
**PRIMARY EXAMINER**